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LETTER TO THE EDITOR

Toluene intoxication—atrioventricular block due to hypokalemia?

We read with interest the case report published by Tsao and colleagues,[1] discussing about the clinical manifestation of toluene intoxication. Tsao et al suggested that hypokalemia, as well as direct cardiac toxicity of toluene, might be responsible for the atrioventricular (AV) block. The importance of potassium replacement and toluene withdrawal was emphasized.

However, AV block is not a typical electrocardiographic finding in patients with hypokalemia; it occurs more often in patients with hyperkalemia. In the animal study conducted by Taylor and Harris,[2] PR interval increased and sinoatrial heart rate decreased during a 10-minute inhalation of toluene. Serum blood gas, biochemistry, and electrolytes were not examined in the experiment. Since renal loss of potassium is the presumed mechanism for hypokalemia in toluene intoxication, the level of serum potassium might not change a lot during the 10-minute inhalation. Thus, arrhythmia might relate more with direct arrhythmogenic effect of toluene than hypokalemia. Further study designed to clarify the association between hypokalemia and arrhythmia after toluene sniffing is needed.

In our opinion, arrhythmogenic effect of toluene itself, rather than hypokalemia, might be a better explanation for the AV block observed in this patient.

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